

PATENT ABSTRACTS OF JAPAN

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(21)Application number : 04-016361

(71)Applicant : TAKATA KK

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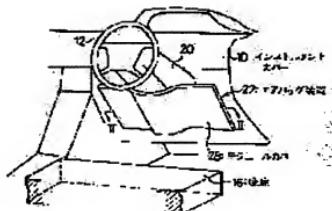
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ATO TADAYUKI

(54) PROTECTING DEVICE FOR VEHICLE OCCUPANT

(57)Abstract:

PURPOSE: To improve accommodation in a cabin of a vehicle provided with a knee bag device.

CONSTITUTION: An air bag device 22 is set up on the lower surface of an instrument panel 10, and an air bag can be spread in a front area of a seat 16. This air bag device 22 is formed into an oblong flat shape and extended from a right sideward part to a left sideward part of a steering column. Thus by decreasing a thickness of the air bag device 22, wide space is provided in the front area of the seat 16 with excellent accommodation.



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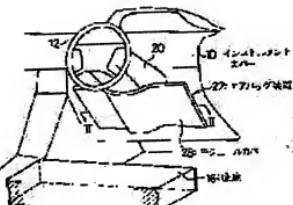
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CLAIMS

[Claim(s)]

[Claim 1] It is the protective device of the car crew characterized by being the front of a seat and being the oblong flat configuration to which said air bag equipment extends in the protective device of the car crew who consists of air bag equipment which has the air bag developed by the field of height including near the bearing-surface height of this seat even from the method part of left-hand side of a steering column to the method part of right-hand side.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]**[0001]**

[Industrial Application] This invention relates to crew's leg protective device which is applied to car crew's protective device, especially is called knee bag equipment.

[0002]

[Description of the Prior Art] The protective device of the car crew who has the air bag (knee bag) developed ahead of the leg of the crew who sat down on the seat of a car is indicated by JP,47-24110,Y and JP,3-28050,A. By developing this knee bag, submarine movement (motion of the body under which it goes in the front lower part of a seat) of crew can be prevented, and crew's lower half of the body can be protected.

[0003]

[Problem(s) to be Solved by the Invention] In well-known car crew's protective device, air bag equipment is arranged ahead [of a seat / central] in each above-mentioned official report. For this reason, air bag equipment will be located near crew's step, and there was a problem that the amenity in a car got worse.

[0004]

[Means for Solving the Problem] In the protective device of the car crew who consists of air bag equipment which the protective device of the car crew of this invention is the front of a seat, and has the air bag developed by the field of height including near the bearing-surface height of this seat, said air bag equipment is characterized by being the oblong flat configuration which extends even from the method part of left-hand side of a steering column to the method part of right-hand side.

[0005]

[Function] In this this invention, air bag equipment serves as a thin form, the distance from crew's step to air bag equipment becomes large, and the large space around [step] crew can be taken now.

[0006]

[Example] With reference to a drawing, an example is explained below. The perspective view of the automatic section [equipped with the protective device of the car crew whom Fig. 1 requires for the example of this invention] in the car, the sectional view where Fig. 2 meets the II-II line of Fig. 1, and Figs. 3 and 4 are extensive form-like explanatory views of an air bag.

[0007] As for an instrument panel 12, in Fig. 1, 10 is [a steering and 16] seats. The steering 12 is attached at the tip of a steering column 18 (Fig. 2), and this steering column 18 is covered with the column covering 20. The air bag equipment 22 of an oblong flat configuration is attached in this instrument panel 10 so that it may extend even from the method of right-hand side of this column covering 20 to the method of left-hand side.

[0008] As shown in Fig. 2, this air bag equipment 22 is equipped with the wrap module covering 28 for the retainer (tie-down plate) 24, the inflator (gas generator) 25 attached in this retainer 24, the air bag 26 which is attached in the retainer 24 and developed by the emission gas of this inflator 25, and this air bag 26. In this example, this air bag equipment 22 is the thing of the configuration to which the central part of that right-and-left cross direction curves and projects ahead a little, and said column covering 20 is located in the background of this curved part.

[0009] In addition, opening 30 is formed in the instrument panel 10, and said inflator 26 is inserted in this opening 30, and, thereby, makes the protrusion height ahead of air bag equipment 22 the still

smaller thing.

[0010] Thus, in car crew's constituted protective device, if the acceleration to the big front occurs when an automobile causes a collision, an inflator 25 will operate based on the signal from the acceleration sensor which is not illustrated, and an air bag 26 will be developed. If it does so, as shown in Fig. 3rd [the] and 4, the module covering 28 is pushed on this air bag 26, and cleaves, and an air bag 26 will be the front of a seat 16, and it will be developed by the field of height including near the bearing-surface height of this seat. For this reason, this leg is protected by the air bag 26 even if the leg of the crew who is sitting on the seat 16 with the collision of a car moves ahead.

[0011] A deer is carried out, and since this air bag equipment 22 is a flat configuration as shown in Figs. 1 and 2, the large space at feet of crew who sat on the seat 16 can be taken. Therefore, the amenity of the car interior of a room becomes what was extremely excellent.

[0012] Although only one inflator 25 is formed in the above-mentioned example, two or more pieces may be prepared.

[0013]

[Effect of the Invention] Since the protective device of the car crew of this invention is what has the small thickness of air bag equipment as above, the large space near the step of the crew who sat on the seat can be taken, and the amenity of a car can be raised.

[0014] Moreover, since an air bag is installed with the gestalt widely distributed over the longitudinal direction ahead of a seat, it is easy to develop an air bag uniformly and quickly in the longitudinal direction of a seat front field.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the perspective view of the car interior of a room equipped with the protective device of the car crew concerning the example of this invention.

[Drawing 2] It is the sectional view which meets the II-II line of drawing 1.

[Drawing 3] It is a perspective view inside the car in which the condition that the air bag developed is shown.

[Drawing 4] It is the sectional view which meets the IV-IV line of drawing 3.

[Description of Notations]

10 Instrument Panel

12 Steering

16 Seat

18 Steering Column

20 Column Covering

22 Air Bag Equipment

24 Retainer

25 Inflator

26 Air Bag

28 Module Covering

30 Opening

[Translation done.]

* NOTICES *

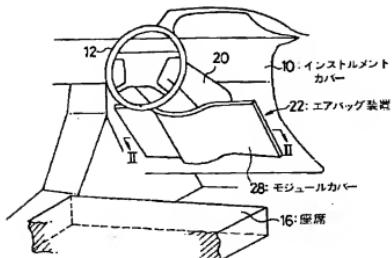
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DRAWINGS

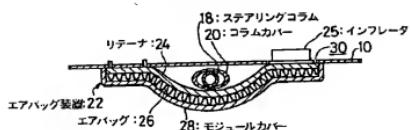
[Drawing 1]

第 1 図



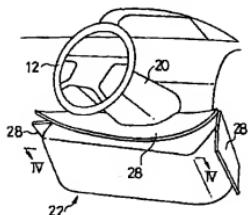
[Drawing 2]

第 2 図



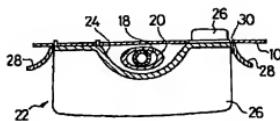
[Drawing 3]

第 3 図



[Drawing 4]

第 4 図



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(19)



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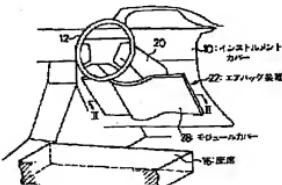
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(54)【発明の名称】 車両乗員の保護装置

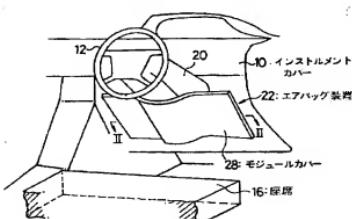
(57)【要約】

【目的】 ニーバッグ装置を備えた車両の室内の居住性を高める。

【構成】 インストルメントパネル10の下面にエアバッグ装置22が設置され、エアバッグを座席16の前方領域に展開可能としている。このエアバッグ装置22は、横長偏平形状のものであり、ステアリングコラムの右側方から左側方の部分にまで延在されている。

【効果】 エアバッグ装置22の厚みが小さいため、座席16の前方領域における空間が広くなっている、居住性に優れる。

第1図



【特許請求の範囲】

【請求項1】 座席の前方であって、かつ該座席の座面高さ付近を含む高さの領域に展開されるエアバッグを有するエアバッグ装置よりなる車両乗員の保護装置において、

前記エアバッグ装置は、ステアリングコラムの左側方部分から右側方部分にまで延在する横長偏平形状であることを特徴とする車両乗員の保護装置。

【発明の詳細な説明】

【0001】

【産業上の利用分野】 本発明は車両乗員の保護装置に係り、特にニーバッグ装置と称される乗員の脚部保護装置に関する。

【0002】

【從来の技術】 車両の座席に着座した乗員の脚部の前方に展開されるエアバッグ（ニーバッグ）を有する車両乗員の保護装置は、実公昭47-24110号公報、特開平3-2805号公報に記載されている。このニーバッグを展開されることにより、乗員のサブマリン運動（座席の前方下部にもぐり込む身体の動き）を阻止し、乗員の下半身を保護することができる。

【0003】

【発明が解決しようとする課題】 上記各公報にて公知の車両乗員の保護装置においては、エアバッグ装置を座席の中央前方に配置している。このため、エアバッグ装置が乗員の足許の近くに位置することになり、車両内の居住性が悪化するという問題があった。

【0004】

【課題を解決するための手段】 本発明の車両乗員の保護装置は、座席の前方であって、かつ該座席の座面高さ付近を含む高さの領域に展開されるエアバッグを有するエアバッグ装置よりなる車両乗員の保護装置において、前記エアバッグ装置は、ステアリングコラムの左側方部分から右側方部分にまで延在する横長偏平形状であることを特徴とするものである。

【0005】

【作用】かかる本発明においては、エアバッグ装置が薄形となっており、乗員の足許からエアバッグ装置までの距離が大きくなり、乗員の足許周囲の空間を広くとれるようになる。

【0006】

【実施例】以下図面を参照して実施例について説明する。第1図は本発明の実施例に係る車両乗員の保護装置を備えた自動車内部の斜視図、第2図は第1図のII-II線に沿う断面図、第3図及び第4図はエアバッグの展開形状説明図である。

【0007】第1図において、10はインストルメントパネル、12はステアリング、16は座席である。ステアリング12はステアリングコラム18（第2図）の先端に取り付けられており、このステアリングコラム18

はコラムカバー20で覆われている。このコラムカバー20の右側方から左側方にまで延在するように横長偏平形状のエアバッグ装置22が該インストルメントパネル10に取り付けられている。

【0008】第2図に示す如く、このエアバッグ装置22は、リテー（取付板）24と、該リテー24に取り付けられたインフレータ（ガス発生器）25と、リテー24に取り付けられており、該インフレータ25の放出ガスにより展開されるエアバッグ26と、該エアバ

ッグ26を復元するモジュールカバー28とを備えている。本実施例では、このエアバッグ装置22は、その左右幅方向の中央部分が若干前方に湾曲して突出する形状のものであり、この湾曲した部分の裏側に前記コラムカバー20が位置されている。

【0009】なお、インストルメントパネル10に開口30が設けられており、前記インフレータ25が該開口30に伸入され、これによりエアバッグ装置22の前方への突出高さを一層小さなものとしている。

【0010】このように構成された車両乗員の保護装置において、自動車が衝突を引き起こしたりすることにより大きな前方への加速度が発生すると、図示しない加速度センサからの信号に基いてインフレータ25が作動されエアバッグ26が展開される。そうすると、第3、4図の如くモジュールカバー28が該エアバッグ26に押されて開裂し、エアバッグ26が座席16の前方であって、かつ該座席の座面高さ付近を含む高さの領域に展開される。このため、車両の衝突によって座席16に座っている乗員の脚部が前方に移動しても、この脚部がエアバッグ26によって保護される。

【0011】しかしして、第1図及び第2図に示す如く、このエアバッグ装置22が偏平形状であるため、座席16に座った乗員の足許の空間を広くとることができることによって、車両室内の居住性がさわめて優れたものとなる。

【0012】上記実施例ではインフレータ25が1個だけ設けられているが、2個以上設けても良い。

【0013】

【発明の効果】以上の通り、本発明の車両乗員の保護装置は、エアバッグ装置の厚みが小さなものとなっているため、座席に座った乗員の足許付近の空間を広くとることができ、車両の居住性を高めることができる。

【0014】また、エアバッグが座席の前方の左右方向に広く分布した形態にて設置されるため、エアバッグを座席前方領域の左右方向において均一にかつ急速に展開させることができるのである。

【図面の簡単な説明】
【図1】本発明の実施例に係る車両乗員の保護装置を備えた車両室内部の斜視図である。

【図2】図1のII-II線に沿う断面図である。

【図3】エアバッグの展開した状態を示す車両内部の斜

視図である。

【図4】図3のIV-IV線に沿う断面図である。

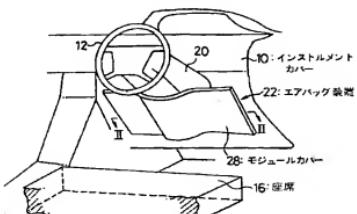
【符号の説明】

- 10 インストルメントパネル
- 12 ステアリング
- 16 座席
- 18 ステアリングコラム

- * 20 コラムカバー
- 22 エアバッグ装置
- 24 リテーナ
- 25 インフレータ
- 26 エアバッグ
- 28 モジュールカバー
- * 30 開口

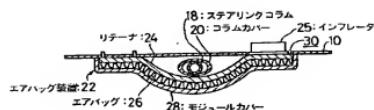
【図1】

第1図



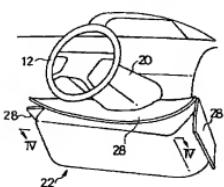
【図2】

第2図



【図3】

第3図



【図4】

第4図

